

IN THE CLAIMS:

Please amend claim 11 as shown in the complete list of claims that is presented below.

1. (original) A program debugger, for reducing debugger impact through motion of an IV-breakpoint set within a program loop, where the IV-breakpoint and the loop are controlled by an induction variable having an induction rate that is determinable at least when the IV-breakpoint is satisfied, said debugger comprising:

means for extracting, from program code within the loop, the induction rate;

means for extracting, from the IV-breakpoint, a final value for which the IV-breakpoint may be satisfied; and

means for removing the IV-breakpoint, if the IV-breakpoint is satisfied and the induction variable has a present value that would be beyond the final value upon a next iteration of the loop based on the induction rate.

2. (original) The debugger of claim 1, further comprising:

means for setting, at a first loop exit program position, a first reset breakpoint if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate; and

means for reestablishing the IV-breakpoint if said first reset breakpoint is satisfied.

3. (original) The debugger of claim 2, further comprising:

means for removing said first reset breakpoint if said first reset breakpoint is satisfied.

4. (original) The debugger of claim 2, further comprising:

means for setting, at a second loop exit program position, a second reset breakpoint if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate; and

means for reestablishing the IV-breakpoint if one of said first and second reset breakpoints is satisfied.

5. (original) The debugger of claim 4, further comprising:

means for removing said first and second reset breakpoints if one of said first and second reset breakpoints is satisfied.

6. (original) A method of reducing debugger impact through motion of an IV-breakpoint set within a program loop, where the IV-breakpoint and the loop are controlled by an induction variable having an induction rate that is determinable at least when the IV-breakpoint is satisfied, said method comprising:

extracting, from program code within the loop, the induction rate;

extracting, from the IV-breakpoint, a final value for which the IV-breakpoint may be satisfied; and

if the IV-breakpoint is satisfied and the induction variable has a present value that would be beyond the final value upon a next iteration of the loop based on the induction rate, removing the IV-breakpoint.

7. (original) The method of claim 6, further comprising:

if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate, setting, at a first loop exit program position, a first reset breakpoint; and

if said first reset breakpoint is satisfied, reestablishing the IV-breakpoint.

8. (original) The method of claim 7, further comprising:

if said first reset breakpoint is satisfied, removing said first reset breakpoint.

9. (original) The method of claim 6, further comprising:

if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate, setting, at a second loop exit program position, a second reset breakpoint; and

if one of said first and second reset breakpoints is satisfied, reestablishing the IV-breakpoint.

10. (original) The method of claim 9, further comprising:

if one of said first and second reset breakpoints is satisfied, removing said first and second reset breakpoints.

11. (currently amended) An article of manufacture comprising:

a computer program medium readable by a computer and embodying one or more instructions executable by the computer to perform a method of reducing debugger impact through motion of an IV-breakpoint set within a program loop, where the IV-breakpoint and the loop are controlled by an induction variable having an induction rate that is determinable at least when the IV-breakpoint is satisfied, ~~the method comprising:~~
wherein the method of reducing debugger impact includes the steps of

extracting, from program code within the loop, the induction rate;

extracting, from the IV-breakpoint, a final value for which the IV-breakpoint may be satisfied; and

if the IV-breakpoint is satisfied and the induction variable has a present value that would be beyond the final value upon a next iteration of the loop based on the induction rate, removing the IV-breakpoint.

12. (original) The article of manufacture of claim 11, wherein the method further comprises:

if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate, setting, at a first loop exit program position, a first reset breakpoint; and

if said first reset breakpoint is satisfied, reestablishing the IV-breakpoint.

13. (original) The article of manufacture of claim 12, wherein the method further comprises:

if said first reset breakpoint is satisfied, removing said first reset breakpoint.

14. (original) The article of manufacture of claim 12, wherein the method further comprises:

if the IV-breakpoint is satisfied and the present value of the induction variable would be beyond the final value upon the next iteration of the loop based on the induction rate, setting, at a second loop exit program position, a second reset breakpoint; and

if one of said first and second reset breakpoints is satisfied, reestablishing the IV-breakpoint.

15. (original) The article of manufacture of claim 14, wherein the method further comprises:

if one of said first and second reset breakpoints is satisfied, removing said first and second reset breakpoints.